

**NEW DATA ON DISTRIBUTION AND MORPHOLOGY FOR THE RARE  
*HASTEOLA ROBERTIORUM* (ASTERACEAE)**

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**ABSTRACT**

Newly discovered localities and their somewhat different habitats are described for the rare Florida endemic *Hasteola robertiorum*. The basic species description is modified to include minor variations found in these new populations.

**KEY WORDS:** *Hasteola robertiorum*, Asteraceae, Florida, range extension, morphological variation

**DISCUSSION**

The recently described *Hasteola robertiorum* L.C. Anderson is a very rare Florida endemic related to the more widespread *H. suaveolens* (L.) Pojarkova, formerly known as *Cacalia suaveolens* L. (Anderson 1994). *Hasteola robertiorum* was described from only a few populations in Levy County, Florida. New populations

were discovered in 1994 from somewhat different habitats in Lake County, Florida, in an area disjunct 120 km from the Levy County sites. Additionally, the species description must be emended slightly to accommodate certain features found on plants from these new populations.

The abbreviated collection data of the Lake County populations are: soggy black muck of seepage-saturated hydric hammock along spring-fed blackwater stream (Sulphur Run) in Seminole State Forest, ca. 1 air km SE of Lake Jordan, ca. 25 air km ENE of Eustis, 18 Oct 1994, *S.L. Orzell, E.L. Bridges, & G. Reese* 23332 (FLAS, FSU, FTG, NY, TEX, USF); soggy, often quaking, deep black muck of hydric hammock along Sulphur Run, Seminole State Forest, ca. 0.8 air km SE of Lake Jordan, ca. 24 air km ENE of Eustis, 18 Oct 1994, *S.L. Orzell, E.L. Bridges, & G. Reese* 23336 (FSU, FTG, TEX, USF).

Many thousand plants of *Hasteola robertiorum* are found over a distance of at least one km in the Sulphur Run hydric hammock. The two collection sites are firm to quaking muck microhabitats that are scattered within a blackwater creek valley hydric hammock. There are some isolated areas of saline seepage; the surface soil pH ranges from generally 6.8 to 7.2 (near saline seeps). The canopy of the quaking muck site is dominated by *Magnolia virginiana* L., *Sabal palmetto* (Walt.) Lodd. ex Schult. & Schult., and *Acer rubrum* L., with a tall shrub layer of *Cornus foemina* Mill., *Myrica cerifera* L., and *Leucothoe racemosa* (L.) A. Gray. The canopy dominants of the firmer muck site are *Sabal palmetto*, *Quercus laurifolia* Michx., and *Tilia caroliniana* Mill., with a subcanopy-shrub layer of *Carpinus caroliniana* Walt., *Agarista populifolia* (Lam.) Judd, and *Myrica cerifera*. Herbaceous taxa found at both sites include: *Boehmeria cylindrica* (L.) Sw., *Carex leptalea* Wahl., *Dryopteris ludoviciana* (Kunze) Small, *Mikania cordifolia* (L.f.) Willd., *Oplismenus setarius* Lam., *Osmunda cinnamomea* L., *Panicum commutatum* Schult., *Rhynchospora miliacea* (Lam.) A. Gray, and *Thelypteris palustris* Schott. An additional 63 vascular plant species were associated with *Hasteola* in at least one microhabitat.

Rare species found at one of both of the Lake County sites include *Carex chapmanii* Steud., *Cirsium muticum* Michx., *Rhapidophyllum hystrix* (Pursh) Wendl. & Drude, and *Salix floridana* Chapm.; of these, only *Carex chapmanii* is found at the Levy County sites. The relatively drier Levy County sites also differed noticeably in that they had very few *Sabal palmetto*, which was abundant in the Lake County sites.

Lake County plants (especially those of *Orzell et al* 23332) are generally more robust than those from Levy County. Plants are up to 15 dm tall with basal (radical) leaves up to 54 cm long with petioles up to 32 cm long. Lower cauline leaves are up to 38.5 cm long and 16.5 cm wide. These measurements surpass those of any wild-collected Levy County plants (Anderson 1994), but the progeny of Levy County plants that were garden-grown by Anderson in Tallahassee were even larger. Lake County plants also have more purple pigmentation on lower stems and petioles, and the prominent basal auricles on some cauline leaves measure up to 9 mm long.

Involucres on Lake County plants have average lengths for the species, but the phyllaries number only 7-8, and the 4-7 subtending bracteoles are only 4-6 mm long. Flowers are fewer (8-10 per head). Corollas are average in length, but the tubes are generally longer (5.0-5.4 mm long), the throats concomitantly shorter (1.7-2.4 mm long), and the lobes 2.0-2.8 mm long. Anthers are somewhat shorter (2.0-2.5 mm long). The balusterform anther collars and enlarged stylopodia are typical for the species.

Achenes are shorter (6-7 mm long), and the pappus somewhat longer (5-6 mm long) on Lake County plants compared to 7-9 mm long and 4-5 mm long, respectively, for Levy County plants. The carpodium on Lake County plants has 4-



6 rows of distinctive square to procumbent cells; those of Levy County plants consistently had 6 rows.

In general, the involucre characters of the Lake County plants, particularly phyllary number and number of flowers per head, expand the variation of *Hasteola robertiorum* away from the related species, *H. suaveolens*, providing further evidence of its distinctness. However, floral characters generally indicate more overlap in floral measurements between *H. robertiorum* and *H. suaveolens* than had previously been known. This is not surprising considering that *H. robertiorum* had been described from only a few populations in a very narrow local area, and the Lake County populations may have been isolated from those in Levy County for a significant period. Nevertheless, the consistent trend in reduction of phyllary number and number of flowers per head in Florida *Hasteola* suggests that they are remnants of a once more continuous range.

The Lake County plants, though slightly different in some aspects of morphology from those of Levy County, are not sufficiently distinctive to warrant special taxonomic recognition as a variety or subspecies. The discovery of *Hasteola robertiorum* in Lake County has greatly enlarged the known range for this species (the species being more abundant here than in Levy County), but it still remains a very rare endemic. The Florida Endangered Plant Advisory Council has recommended that it be listed as "endangered" in Florida.

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#### LITERATURE CITED

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